

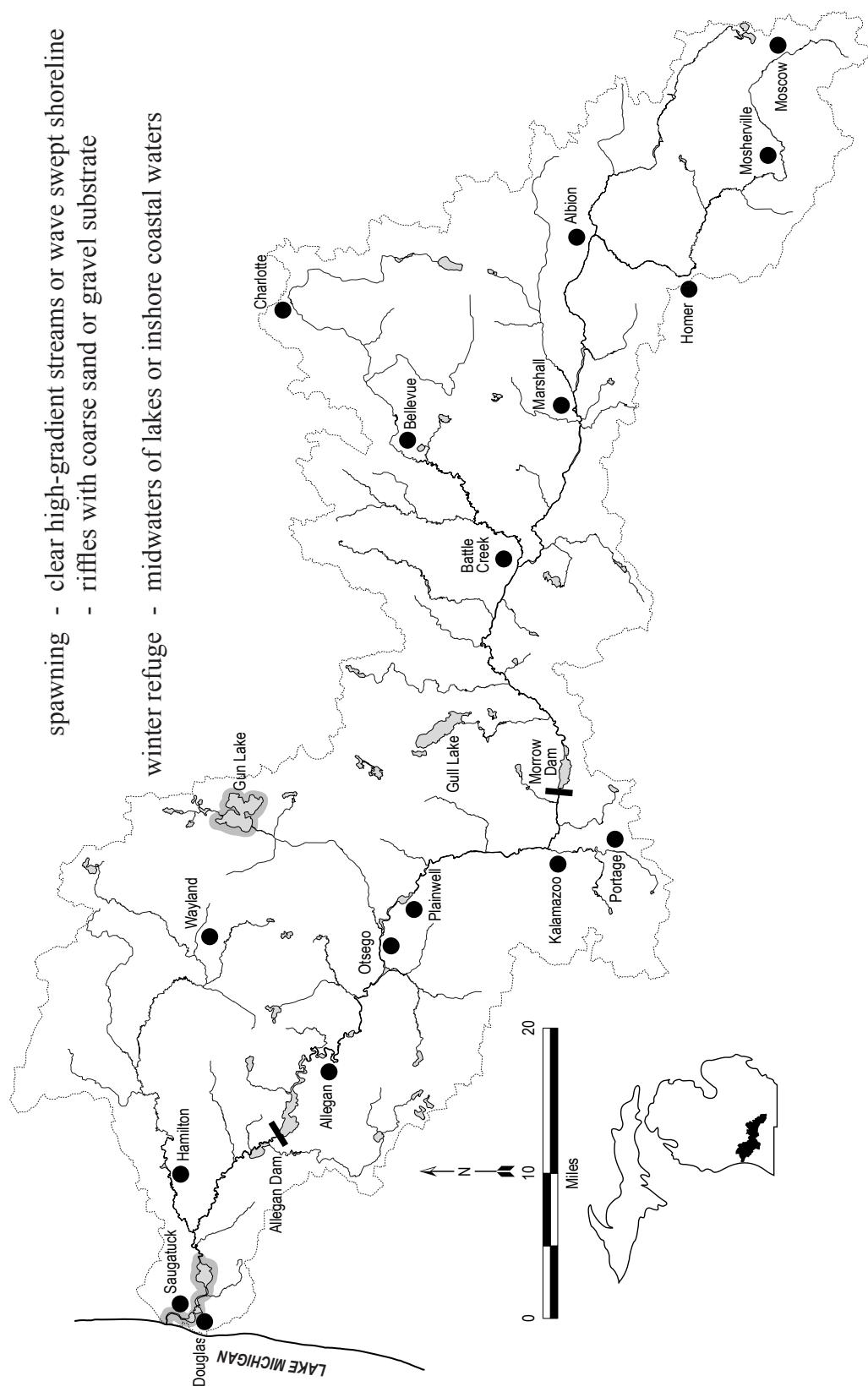
Rainbow smelt (*Osmerus mordax*)

Habitat:

- feeding - young: close inshore lake habitat along sand and gravel beaches
 - cold water

- spawning - clear high-gradient streams or wave swept shoreline
 - riffles with coarse sand or gravel substrate

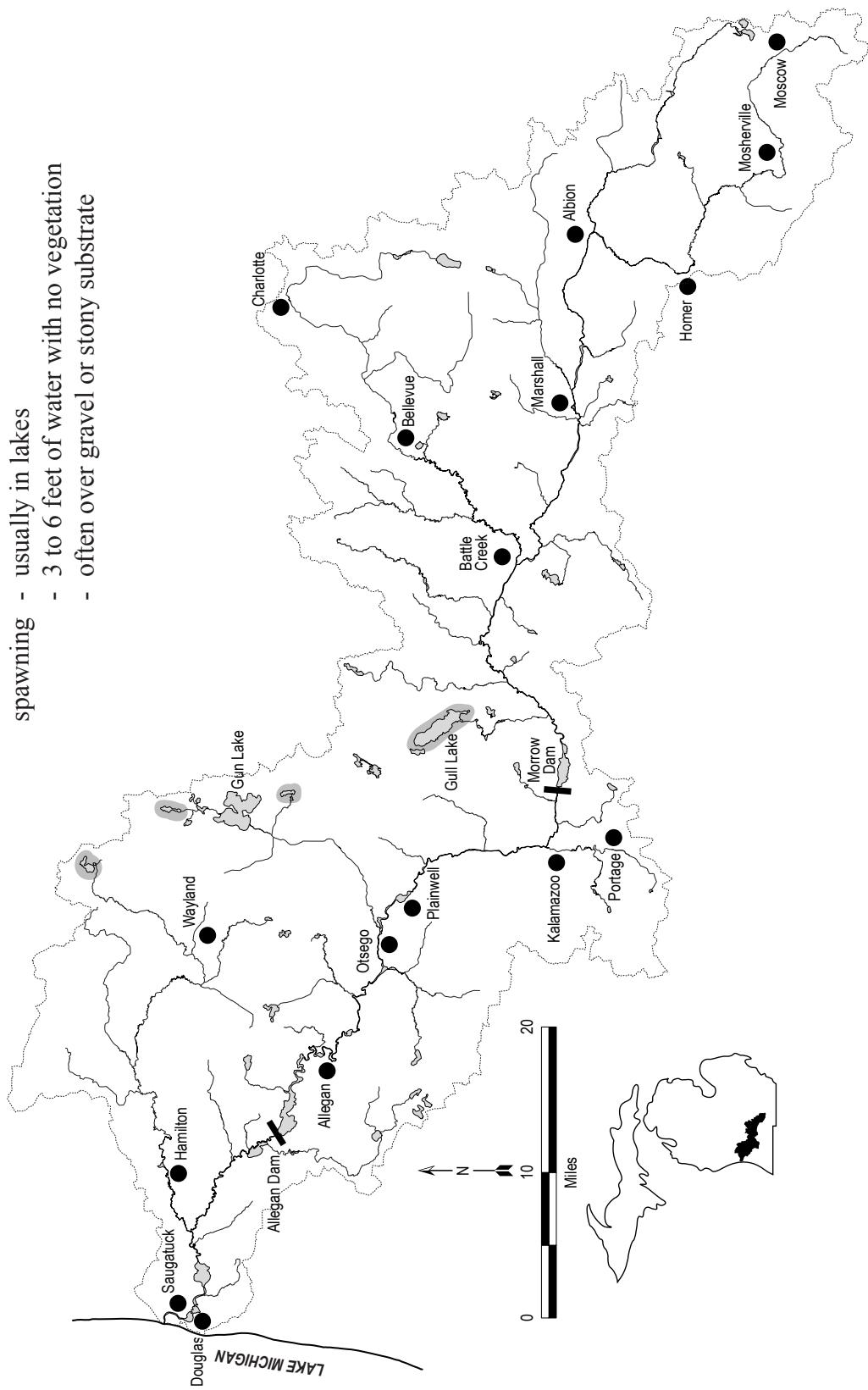
- winter refuge - midwaters of lakes or inshore coastal waters



Cisco {Lake herring} (*Coregonus artedi*) - threatened

Habitat:

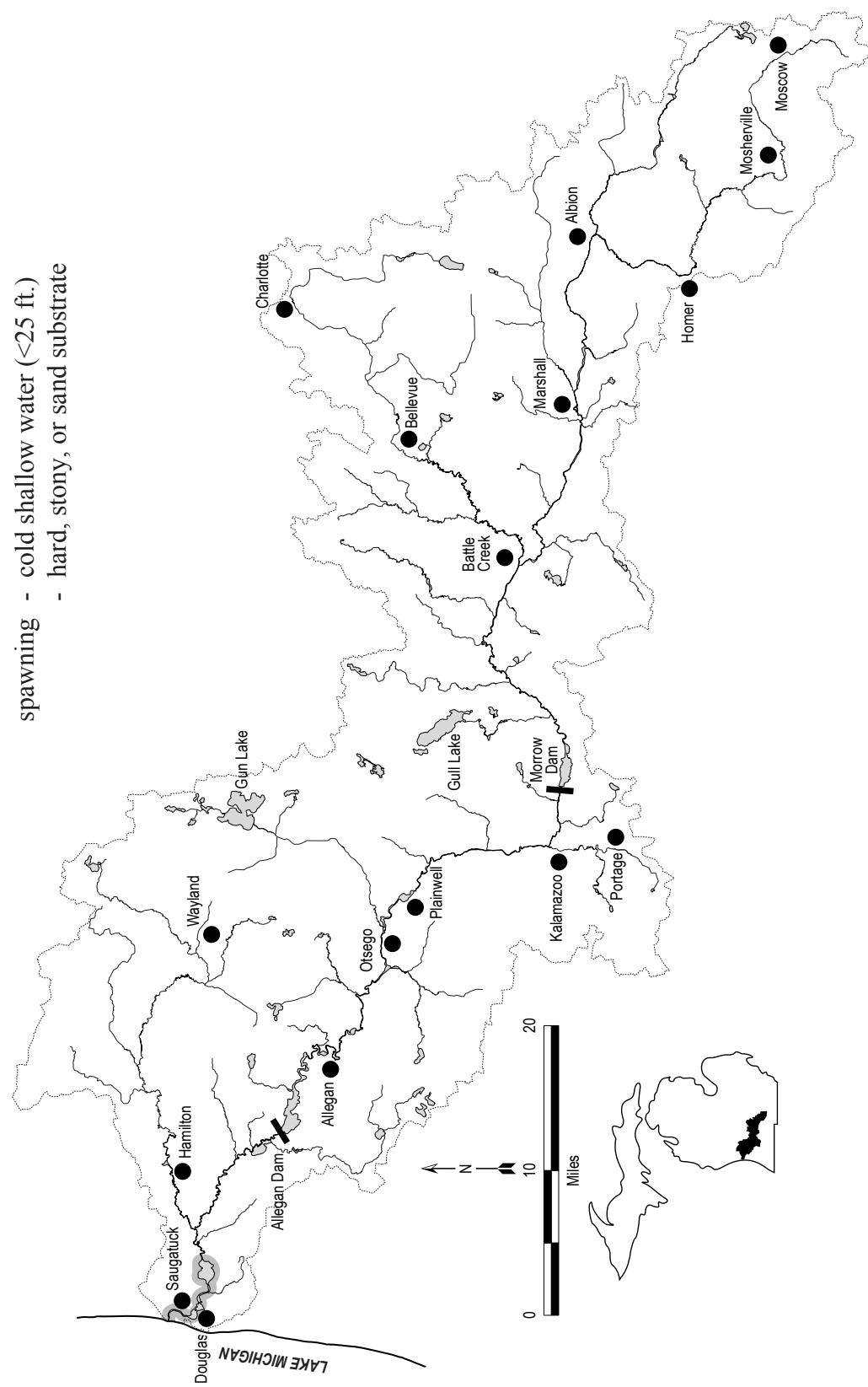
- feeding - deep cool lakes, preferably oligotrophic
- spawning
 - usually in lakes
 - 3 to 6 feet of water with no vegetation
 - often over gravel or stony substrate



Lake whitefish (*Coregonus clupeaformis*)

Habitat: feeding - shallow water (for coregonids; 55-105 ft.)

spawning - cold shallow water (<25 ft.)
- hard, stony, or sand substrate

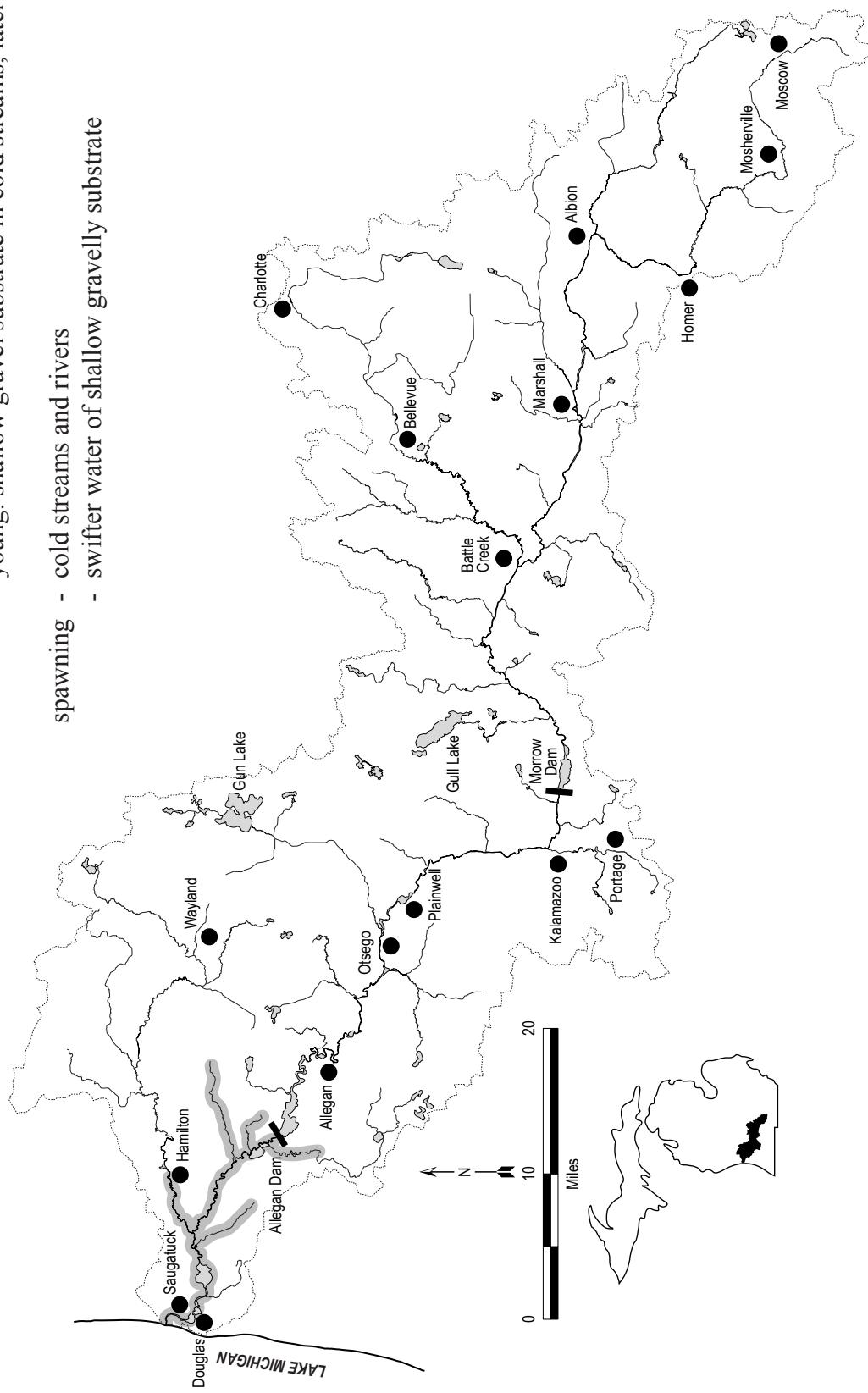


Coho salmon (*Oncorhynchus kisutch*)

Habitat:

feeding - adults: Lake Michigan
- young: shallow gravel substrate in cold streams, later into pools

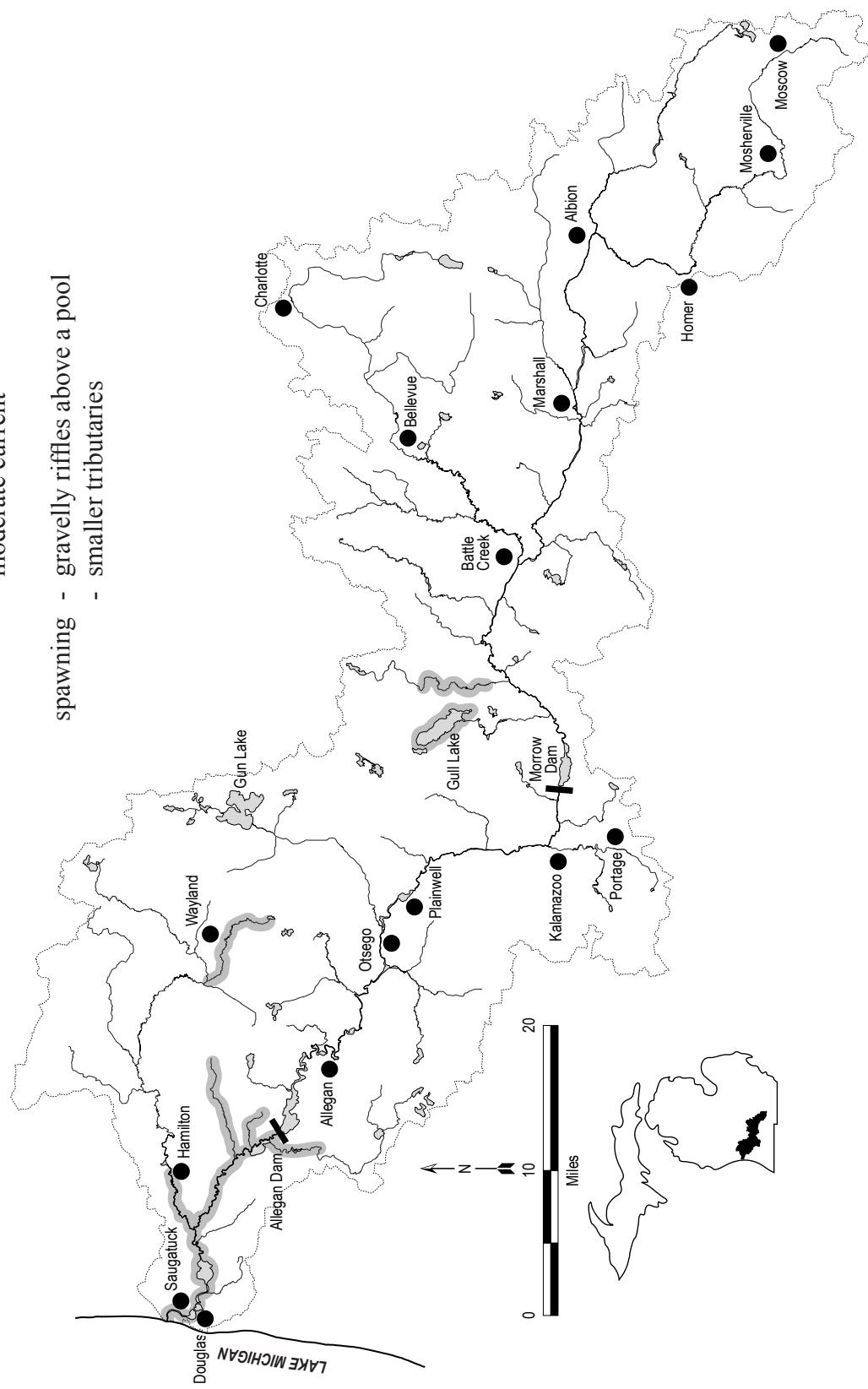
spawning - cold streams and rivers
- swifter water of shallow gravelly substrate



Rainbow trout (*Oncorhynchus mykiss*)

- Habitat:**
- feeding - cold clear water of rivers and Lake Michigan
 - moderate current

 - spawning - gravelly riffles above a pool
 - smaller tributaries

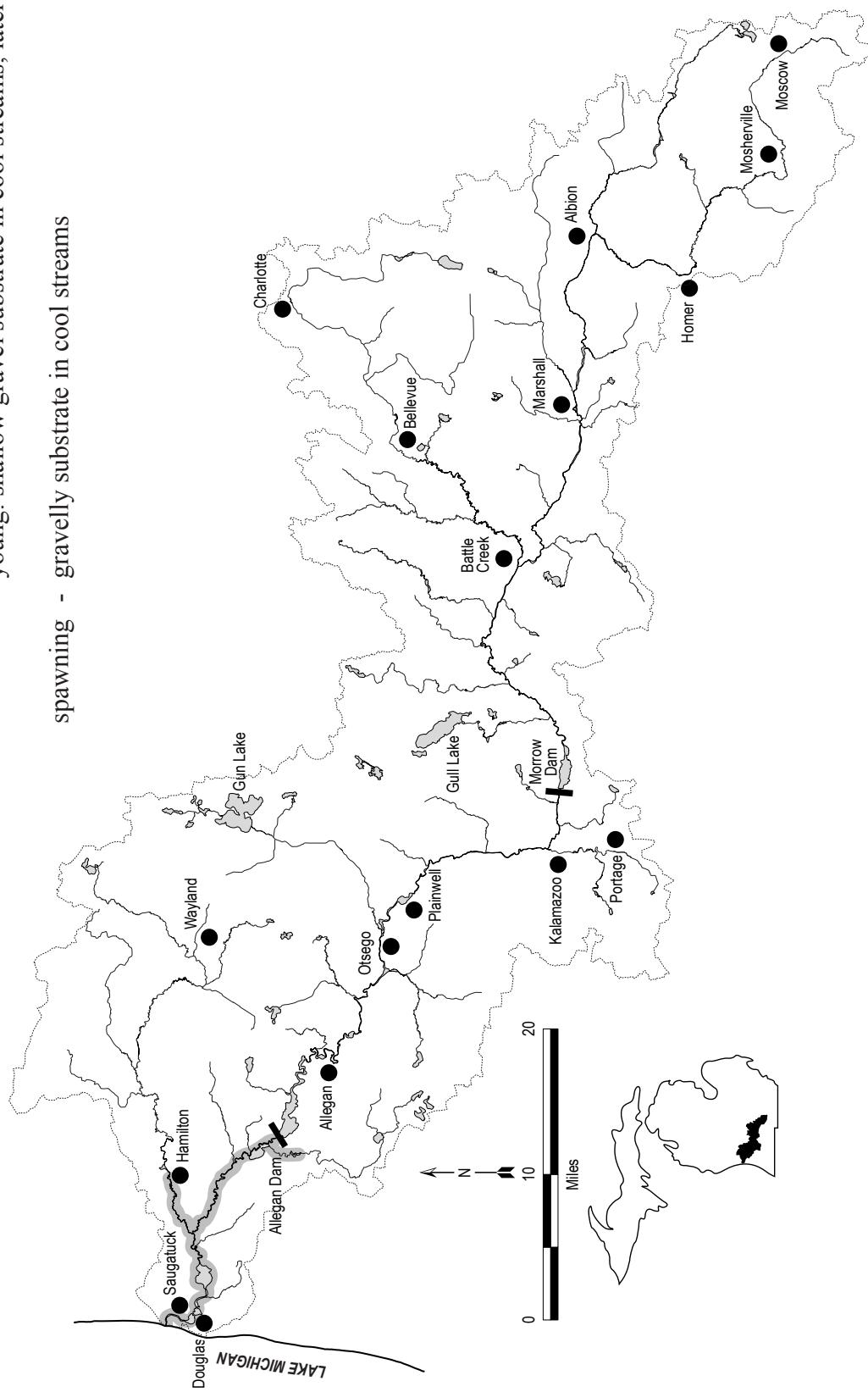


Chinook salmon (*Oncorhynchus tshawytscha*)

Habitat:

- feeding - adults: Lake Michigan
- young: shallow gravel substrate in cool streams, later into pools

spawning - gravelly substrate in cool streams

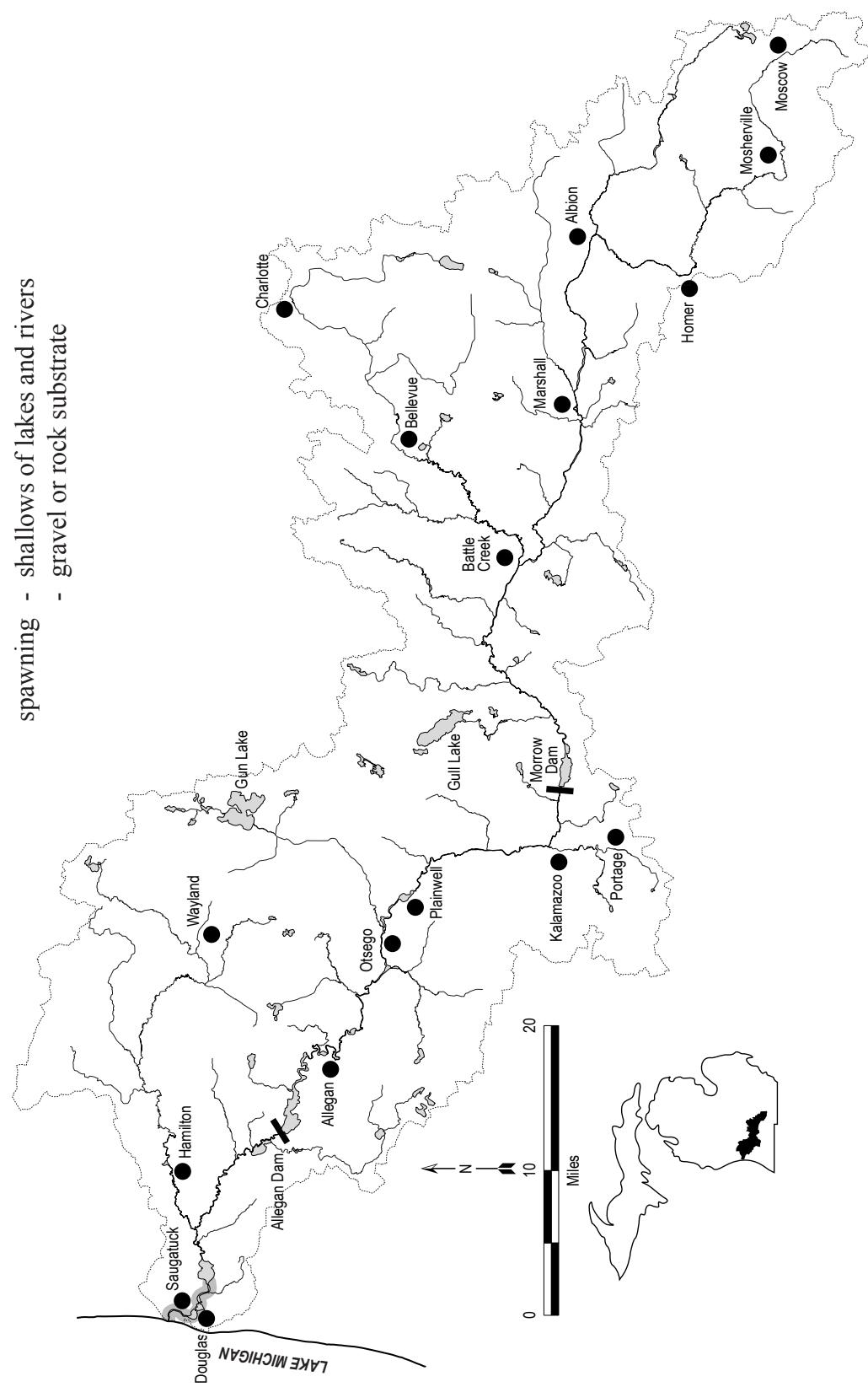


Round whitefish (*Prosopium cylindraceum*)

Habitat:

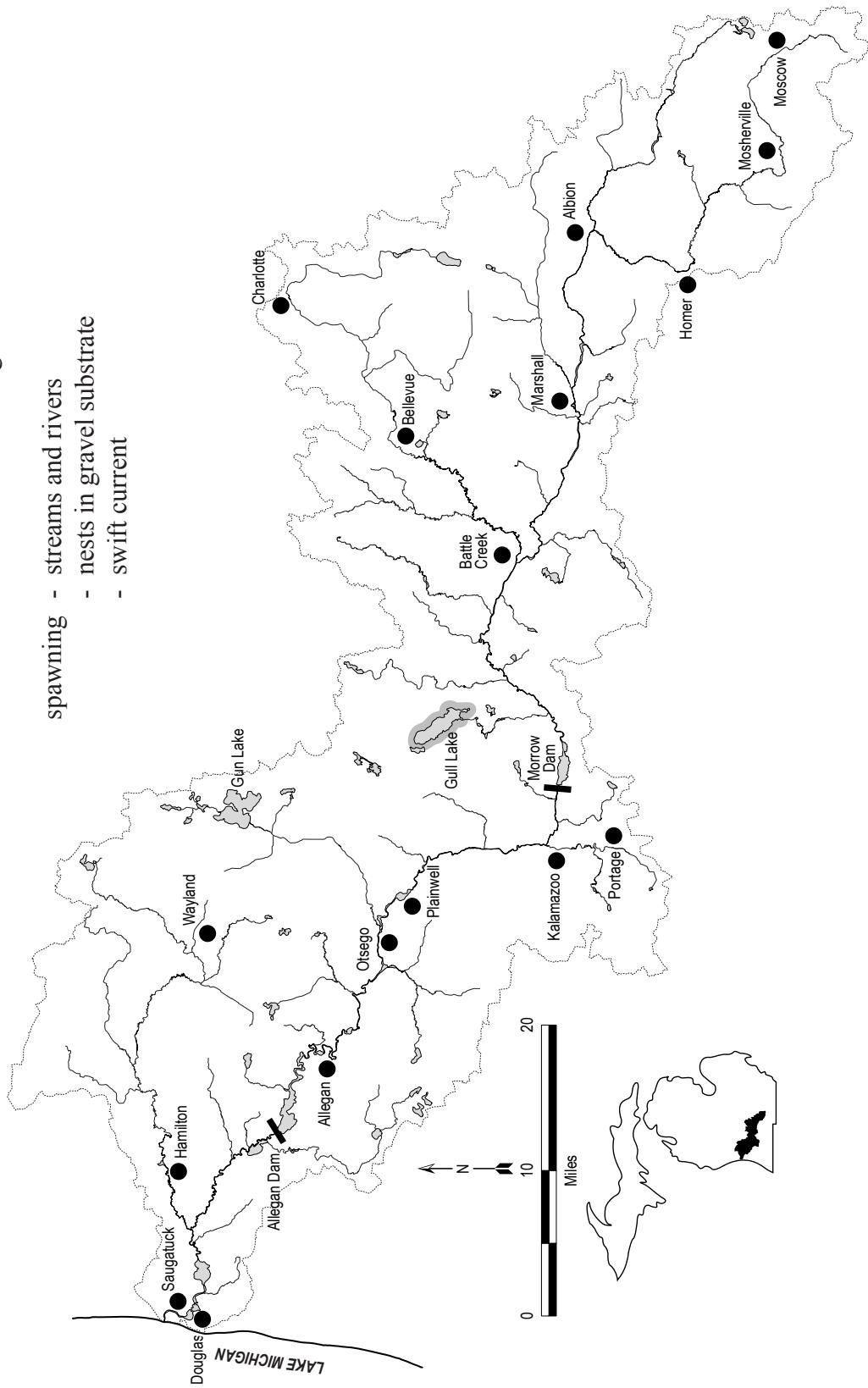
feeding - lakes, rivers, and streams

spawning - shallows of lakes and rivers
- gravel or rock substrate



Atlantic salmon (*Salmo salar*)

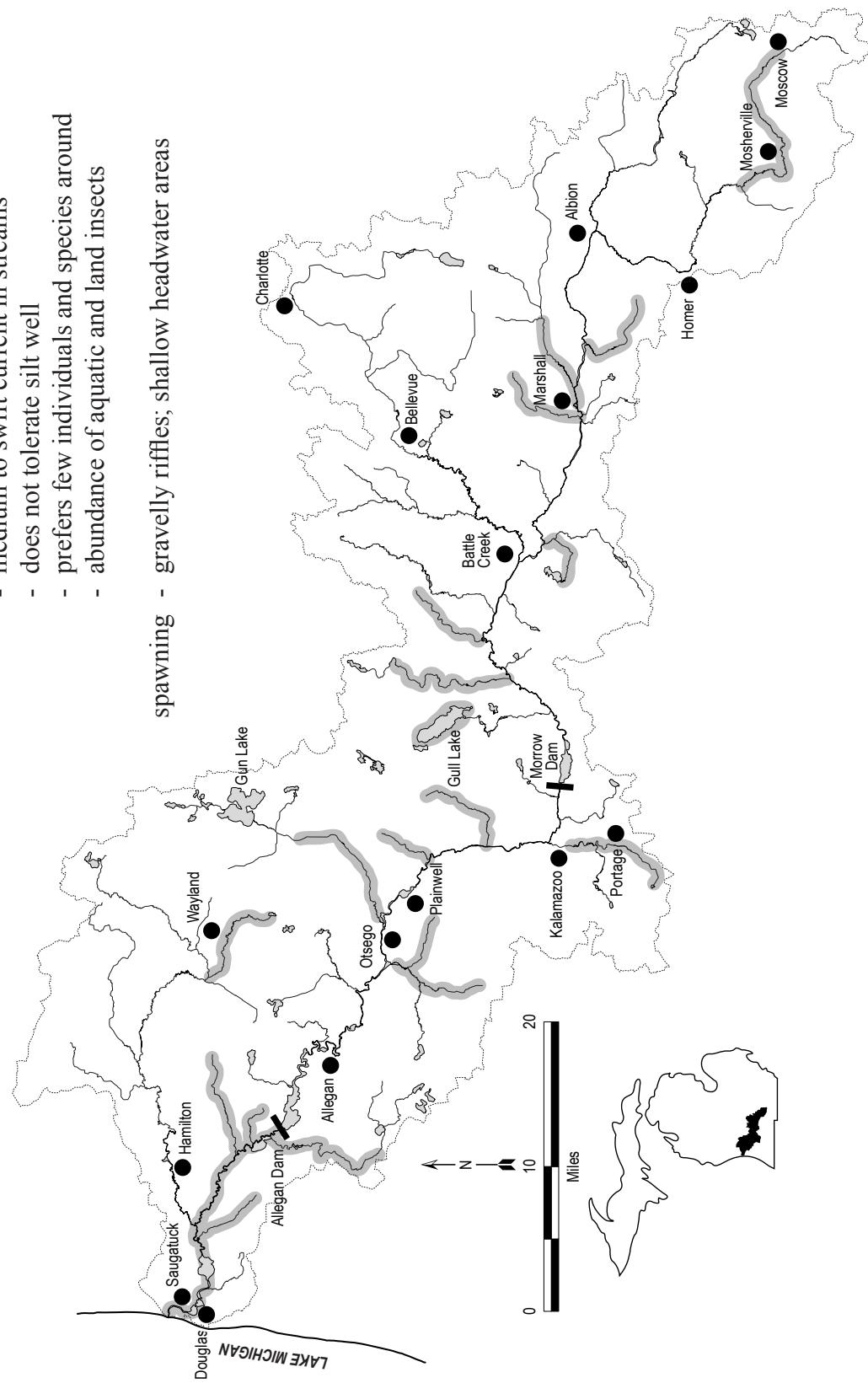
- Habitat:
- feeding - young: gravel substrate streams
 - adults: Lake Michigan
 - spawning - streams and rivers
 - nests in gravel substrate
 - swift current



Brown trout (*Salmo trutta*)

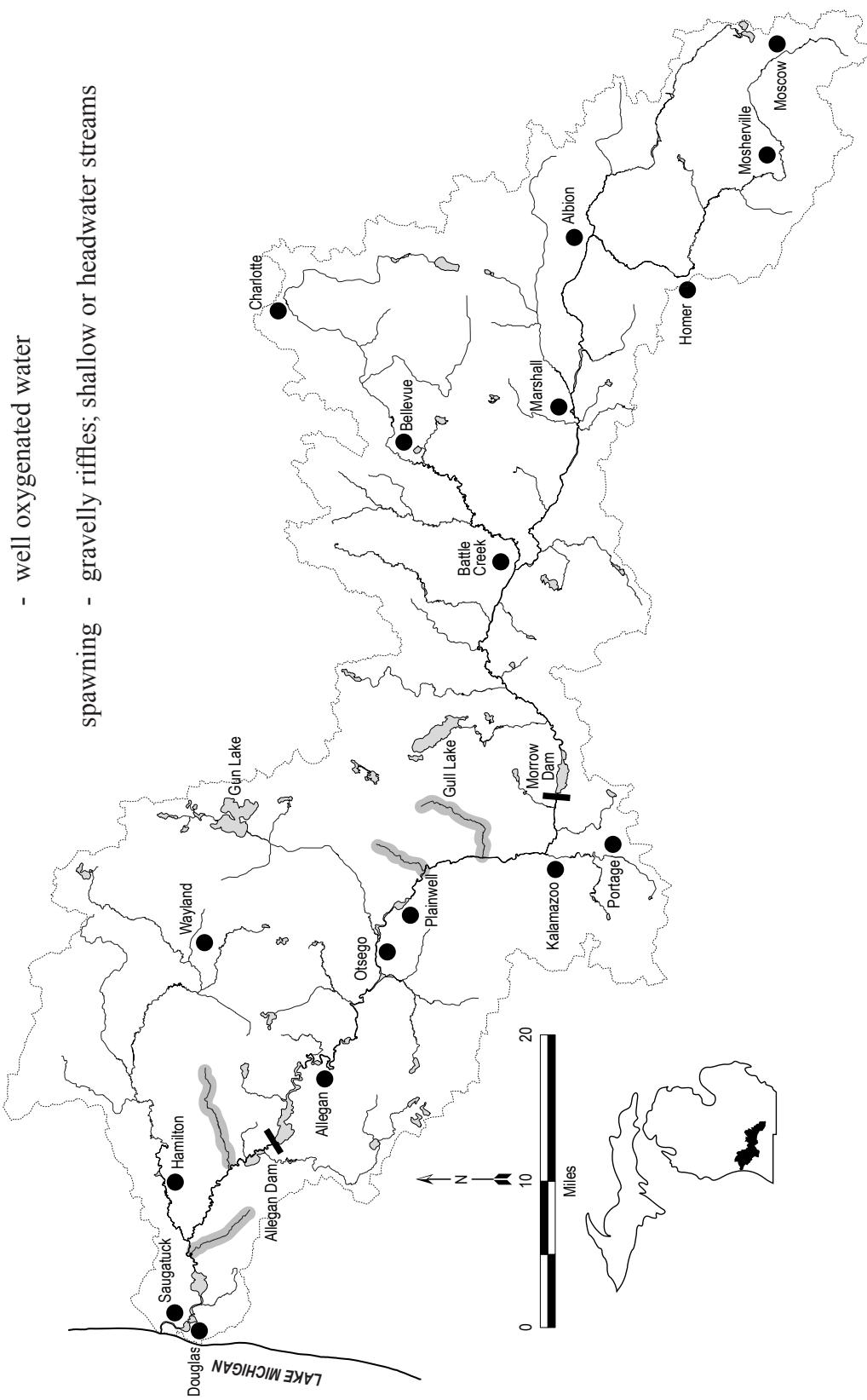
Habitat:

- feeding - cold, clear streams, rivers, and lakes (not $>70^{\circ}\text{F}$)
- medium to swift current in streams
- does not tolerate silt well
- prefers few individuals and species around
- abundance of aquatic and land insects
- spawning - gravelly riffles; shallow headwater areas



Brook trout (*Salvelinus fontinalis*)

- Habitat:**
- feeding - cold, clear streams, rivers, and lakes (not $>65^{\circ}\text{F}$)
 - low current
 - well oxygenated water
 - spawning - gravelly riffles; shallow or headwater streams

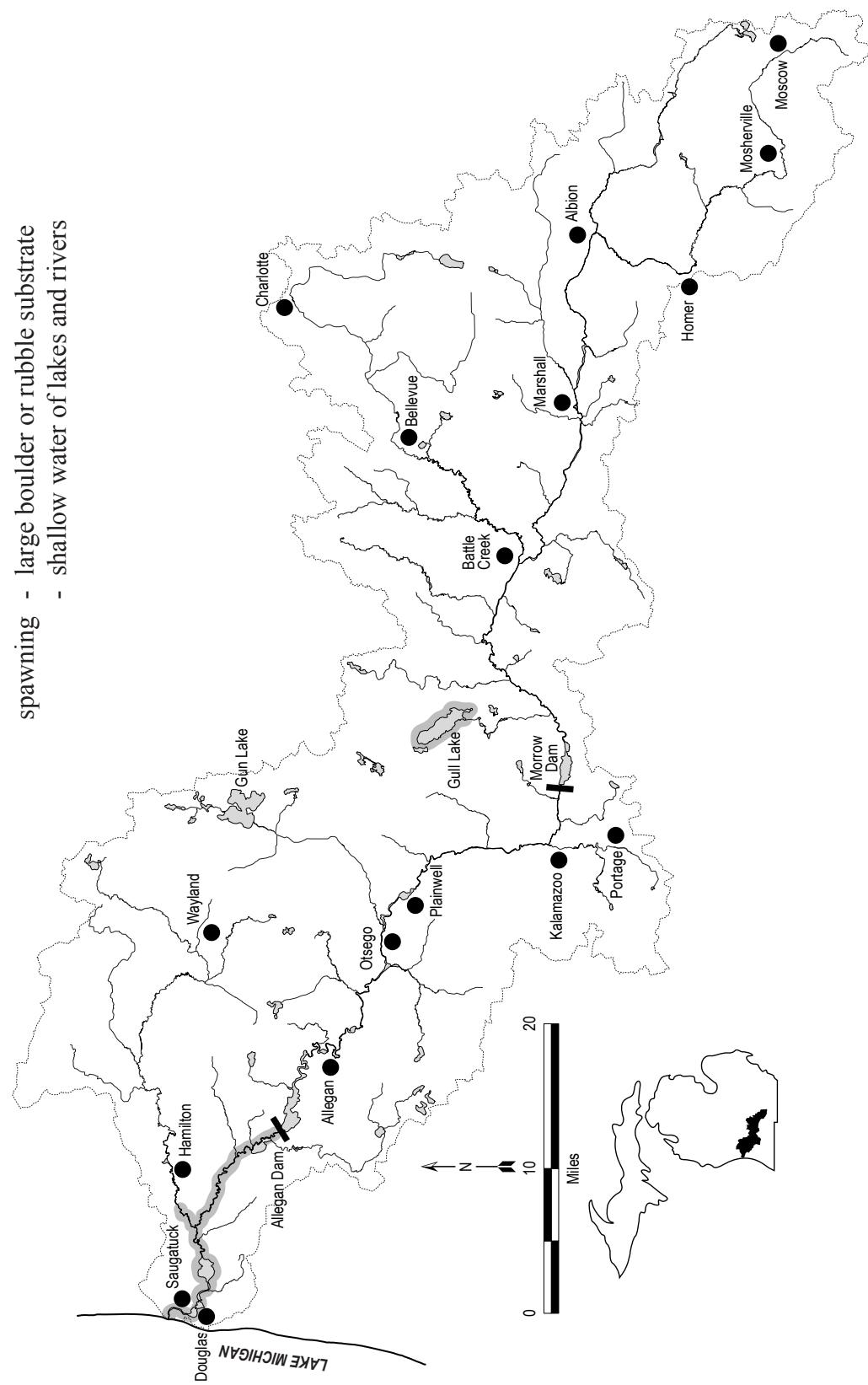


Lake trout (*Salvelinus namaycush*)

Habitat:

feeding - cold lakes and rivers

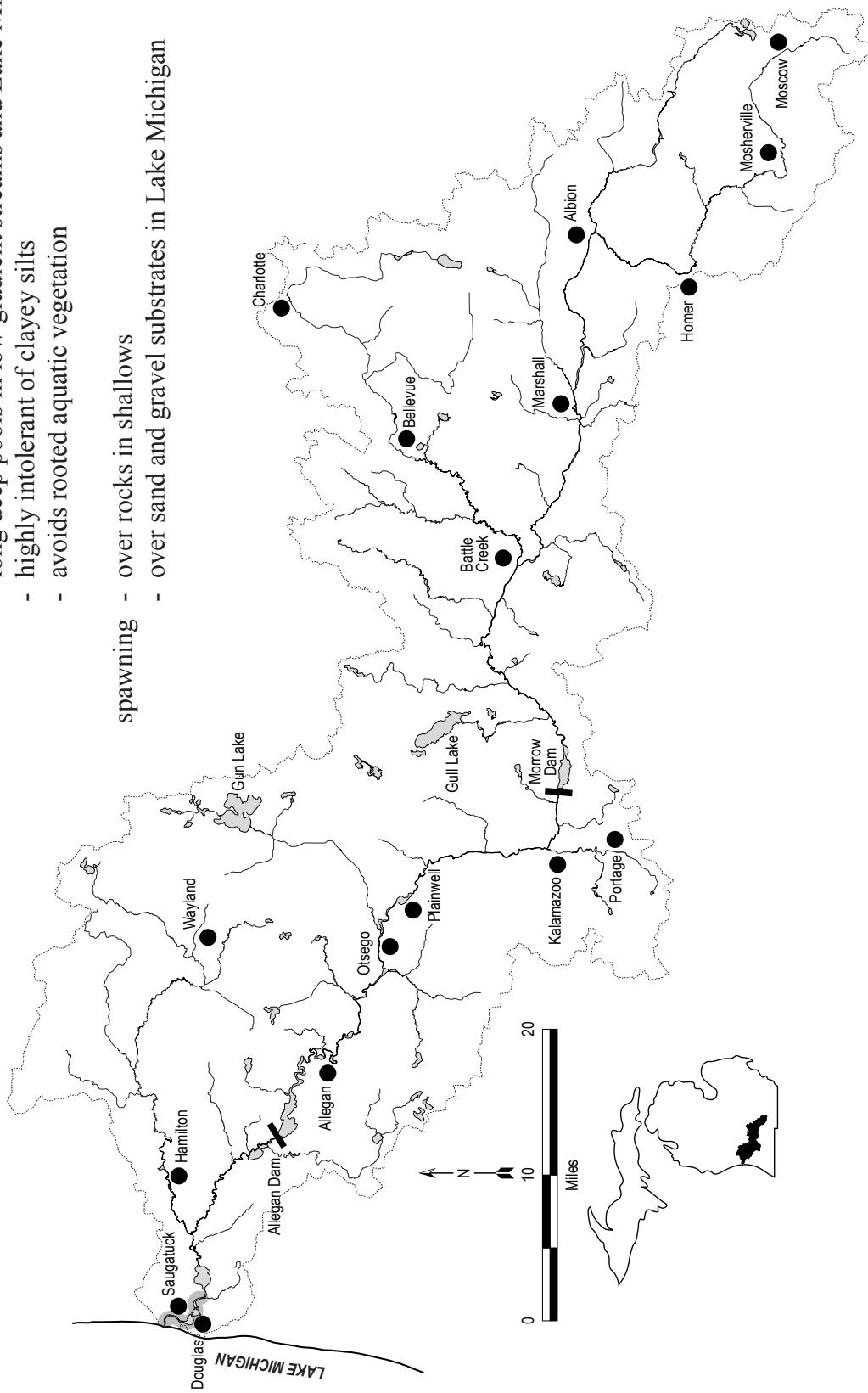
spawning - large boulder or rubble substrate
- shallow water of lakes and rivers



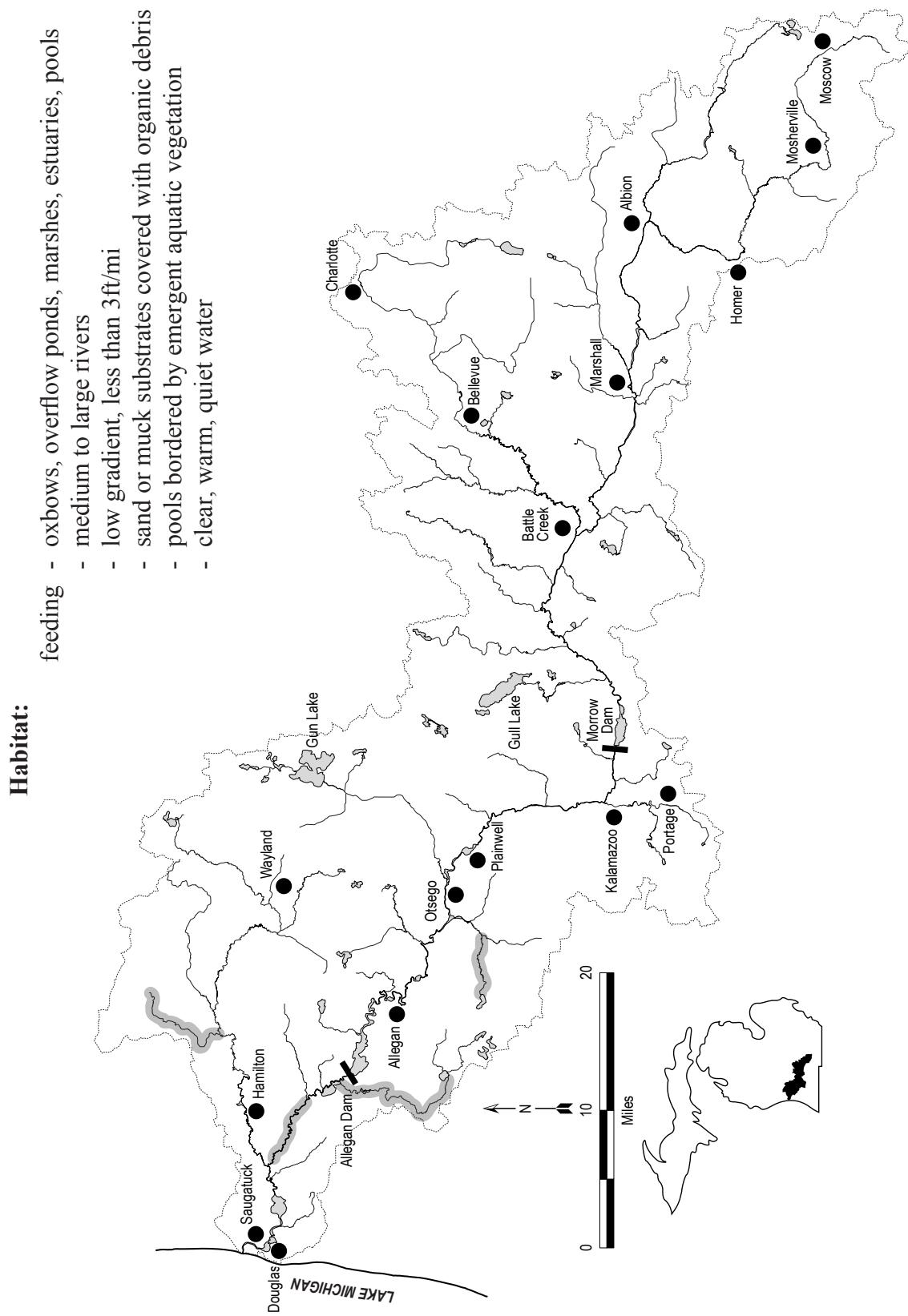
Trout-perch (*Percopsis omiscomaycus*)

Habitat:

- feeding - clean sand or fine gravel substrate
- long deep pools in low gradient streams and Lake Michigan
- highly intolerant of clayey silts
- avoids rooted aquatic vegetation
- spawning - over rocks in shallows
- over sand and gravel substrates in Lake Michigan



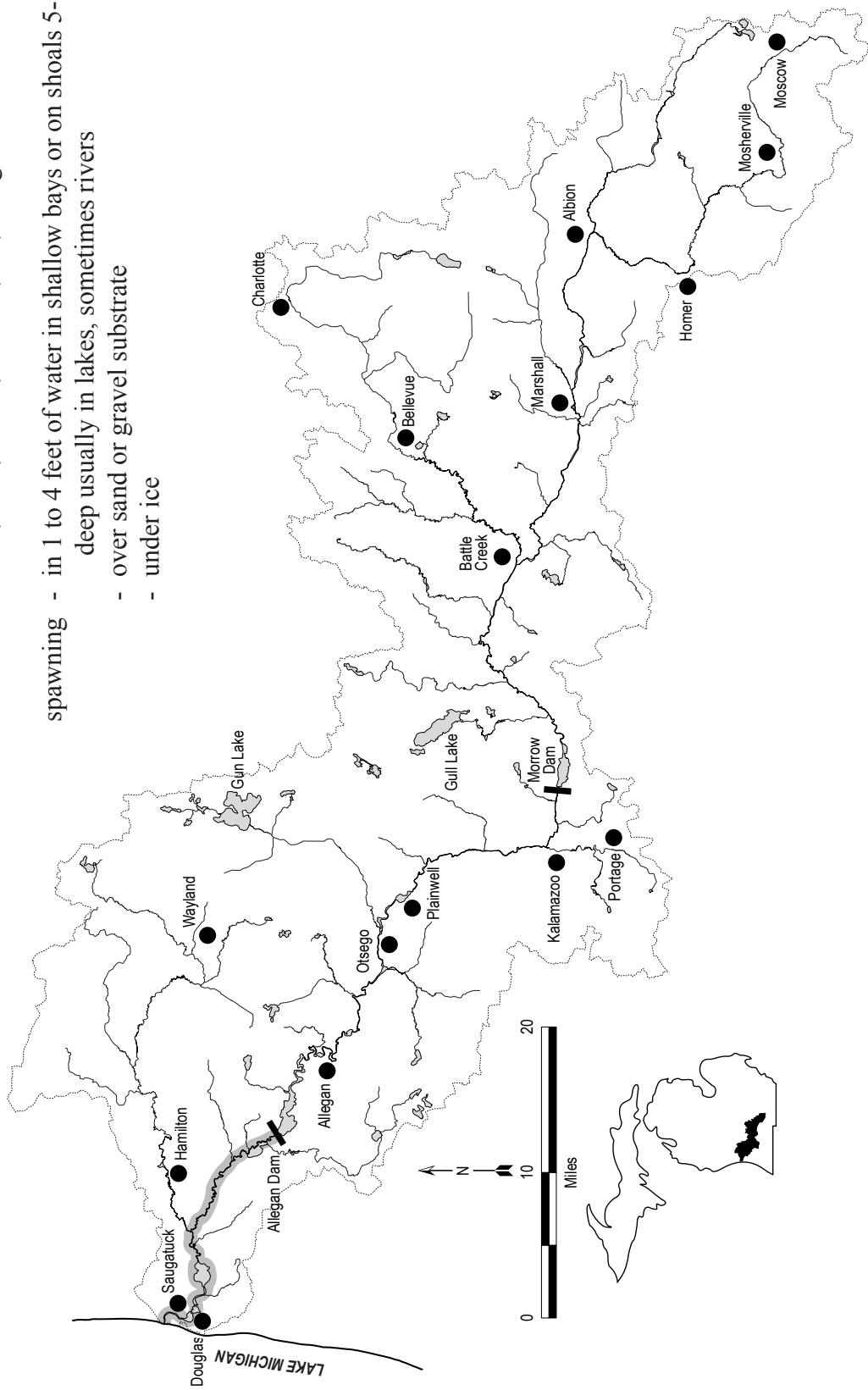
Pirate perch (*Aphredoderus sayanus*)



Burbot (*Lota lota*)

Habitat:

- feeding
 - deep cold lakes and large cool rivers
 - mud, sand, rubble, boulder, silt, and gravel substrates
- spawning
 - in 1 to 4 feet of water in shallow bays or on shoals 5-10 feet deep usually in lakes, sometimes rivers
 - over sand or gravel substrate
 - under ice

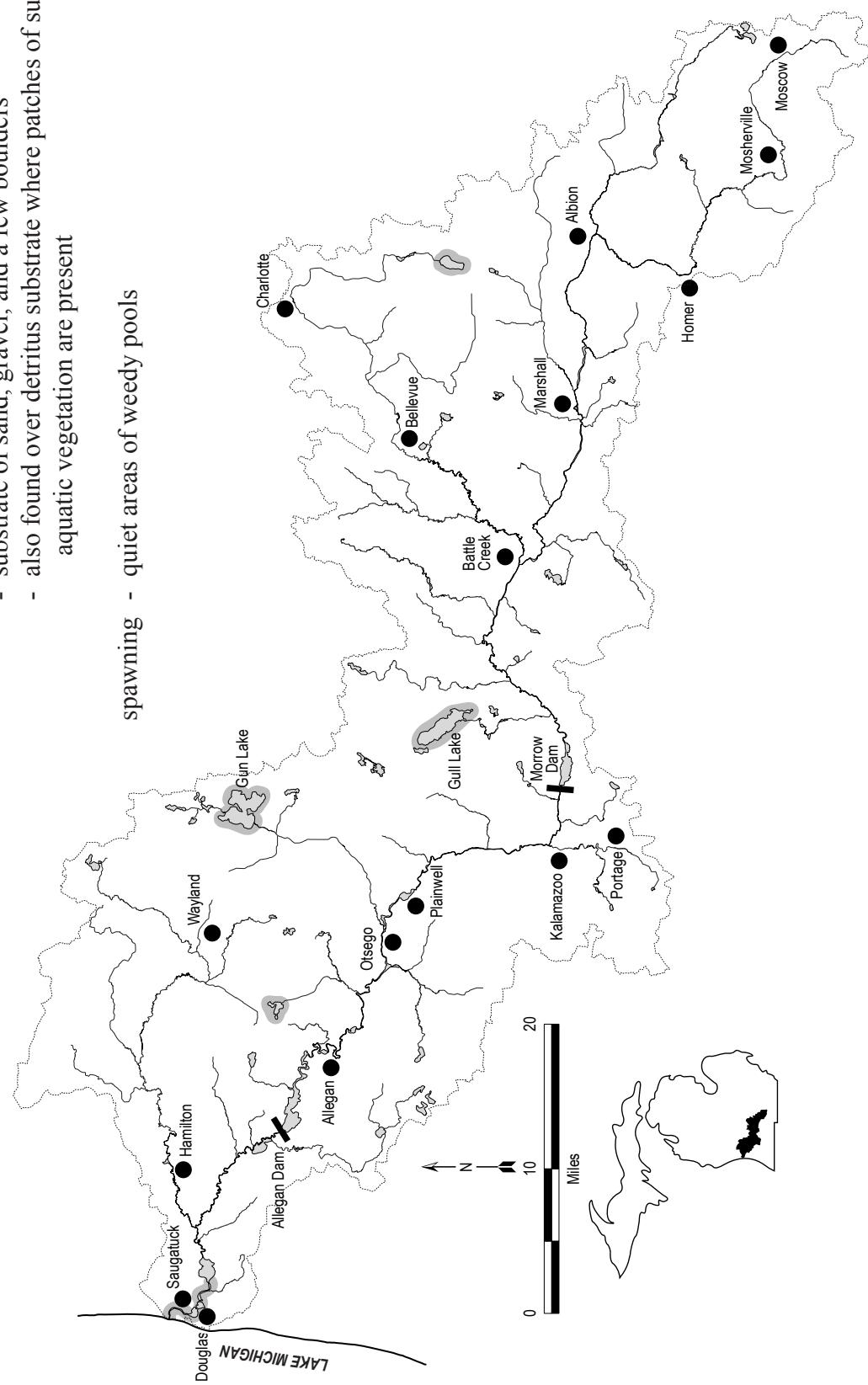


Western banded killifish (*Fundulus diaphanus menona*)

Habitat:

- feeding - quiet backwaters at the mouths of streams and lakes
- substrate of sand, gravel, and a few boulders
- also found over detritus substrate where patches of submerged aquatic vegetation are present

spawning - quiet areas of weedy pools



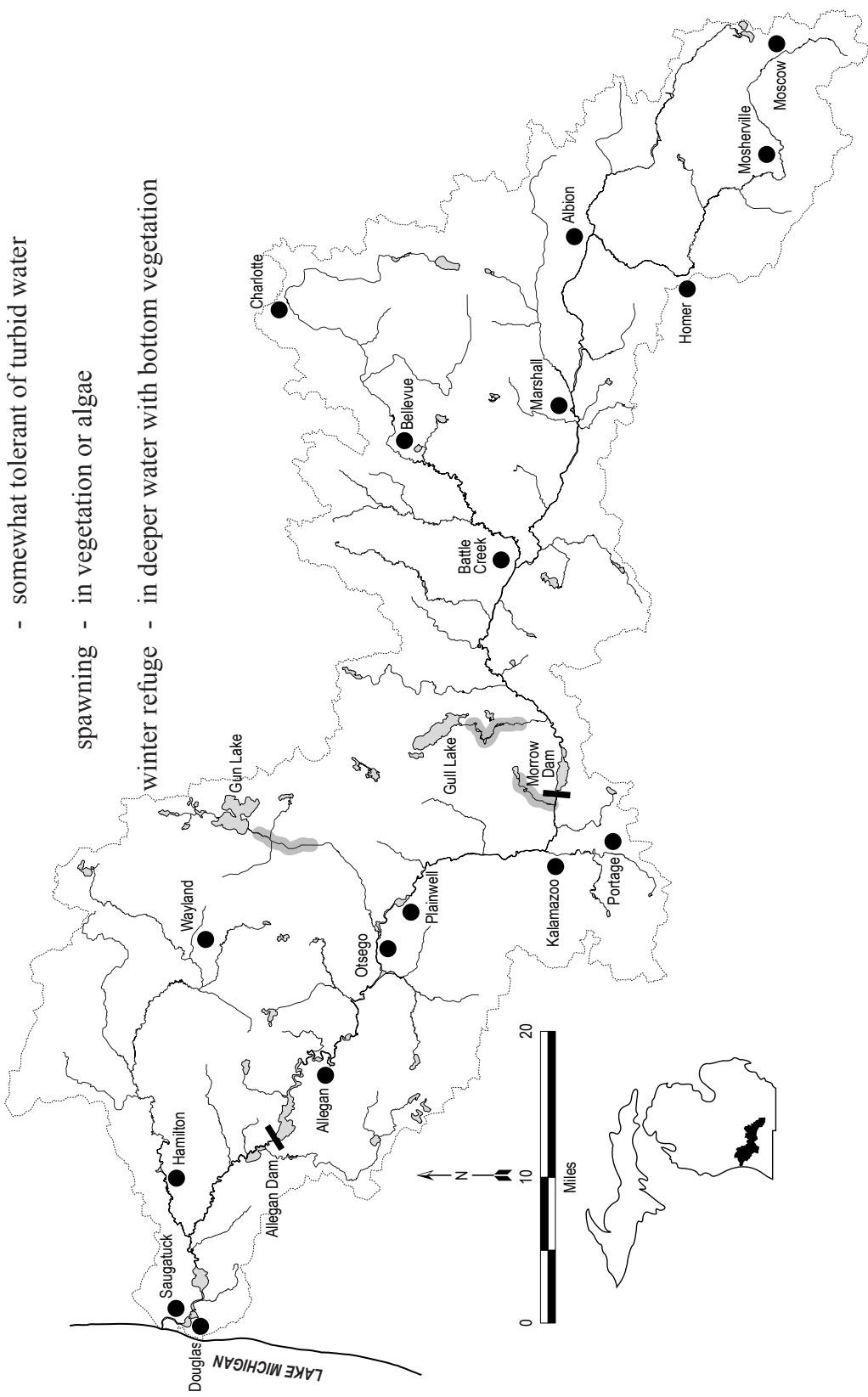
Blackstripe topminnow (*Fundulus notatus*)

Habitat:

- feeding - clear waters of lakes, impoundments and in low-gradient streams
- aquatic or submerged land vegetation
- somewhat tolerant of turbid water

spawning - in vegetation or algae

winter refuge - in deeper water with bottom vegetation

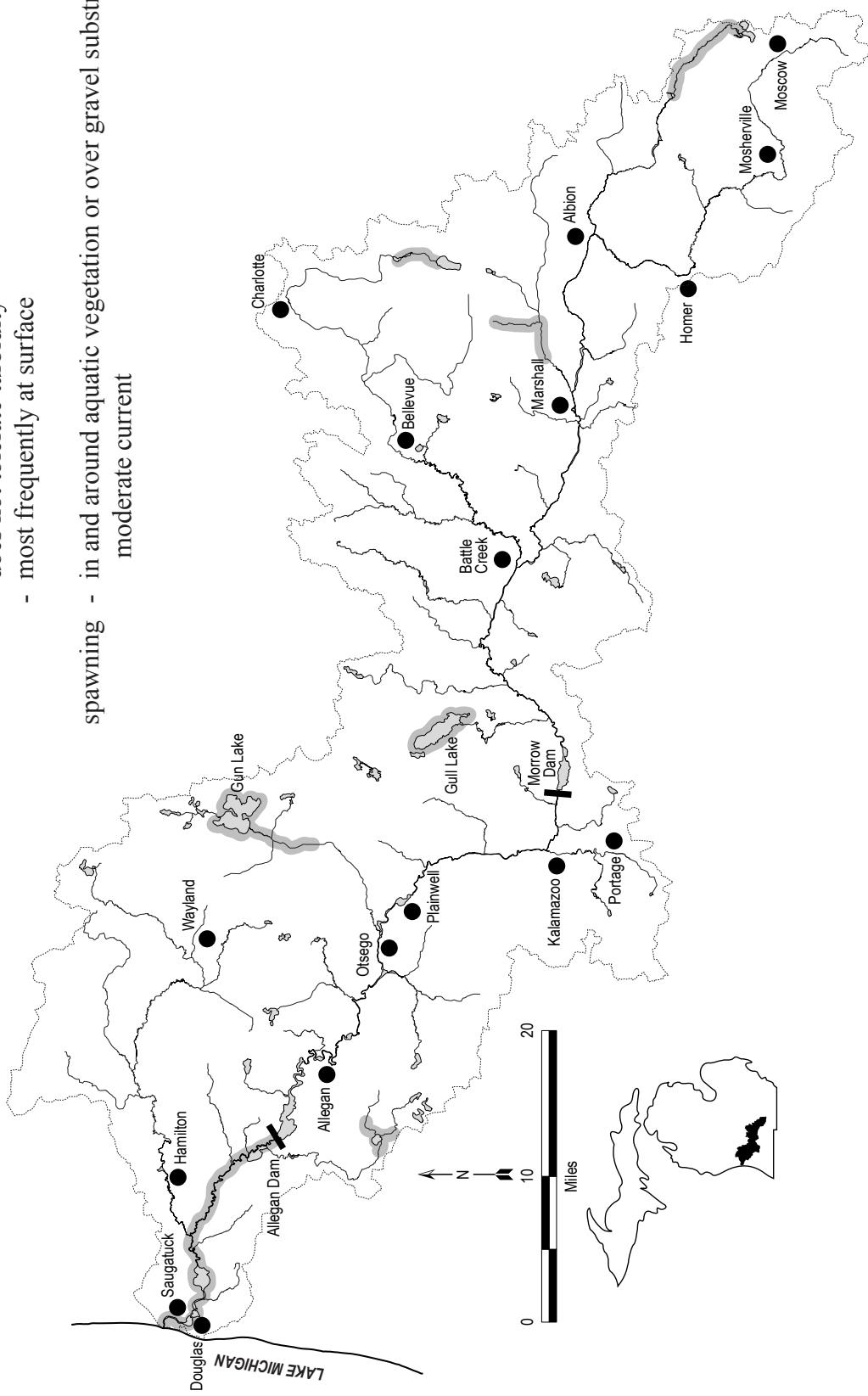


Brook silverside (*Labidesthes sicculus*)

Habitat:

- feeding - clear, warm pools in streams and rivers; also lakes
 - does not tolerate turbidity
 - most frequently at surface

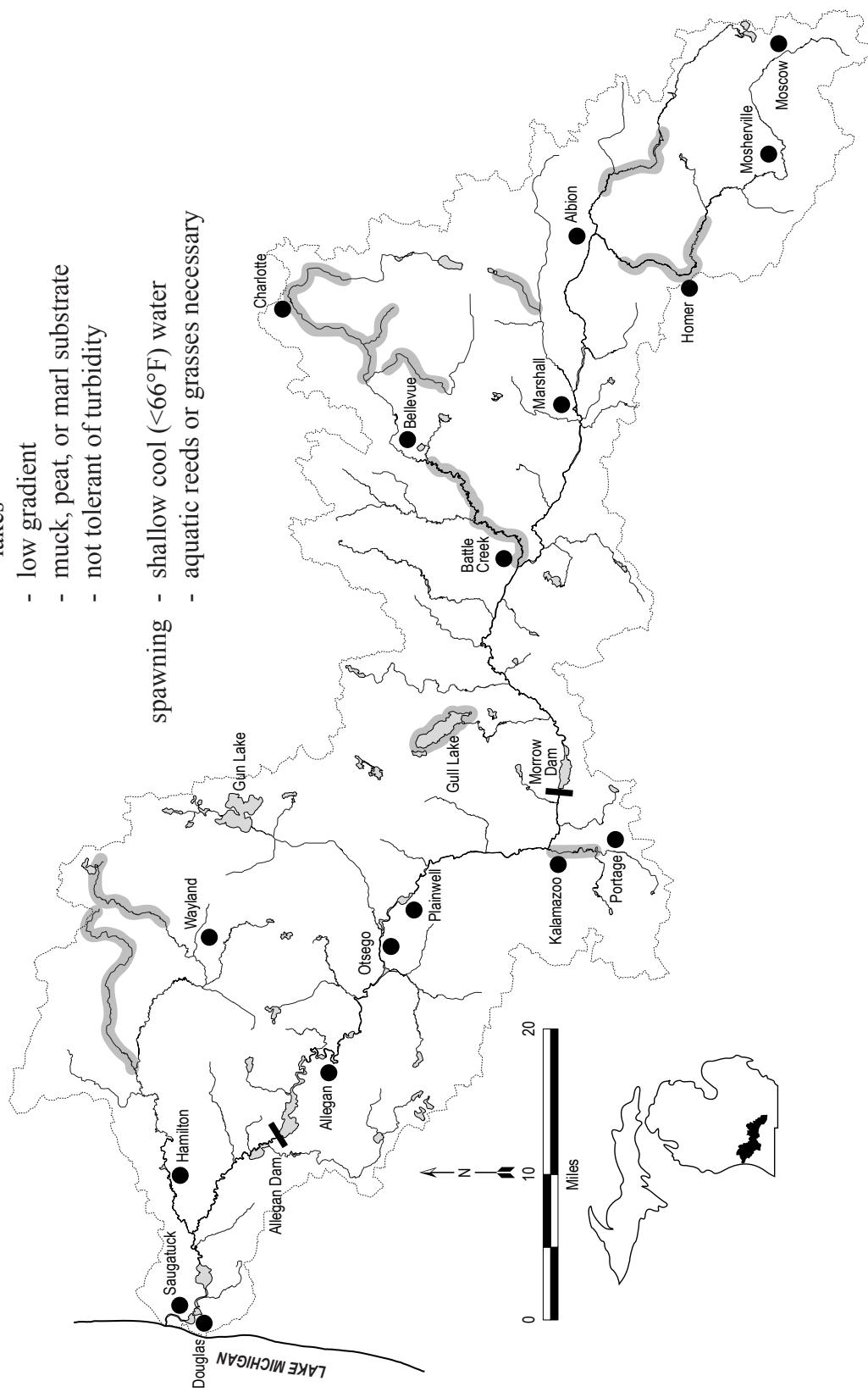
spawning - in and around aquatic vegetation or over gravel substrate with a moderate current



Brook stickleback (*Culaea inconstans*)

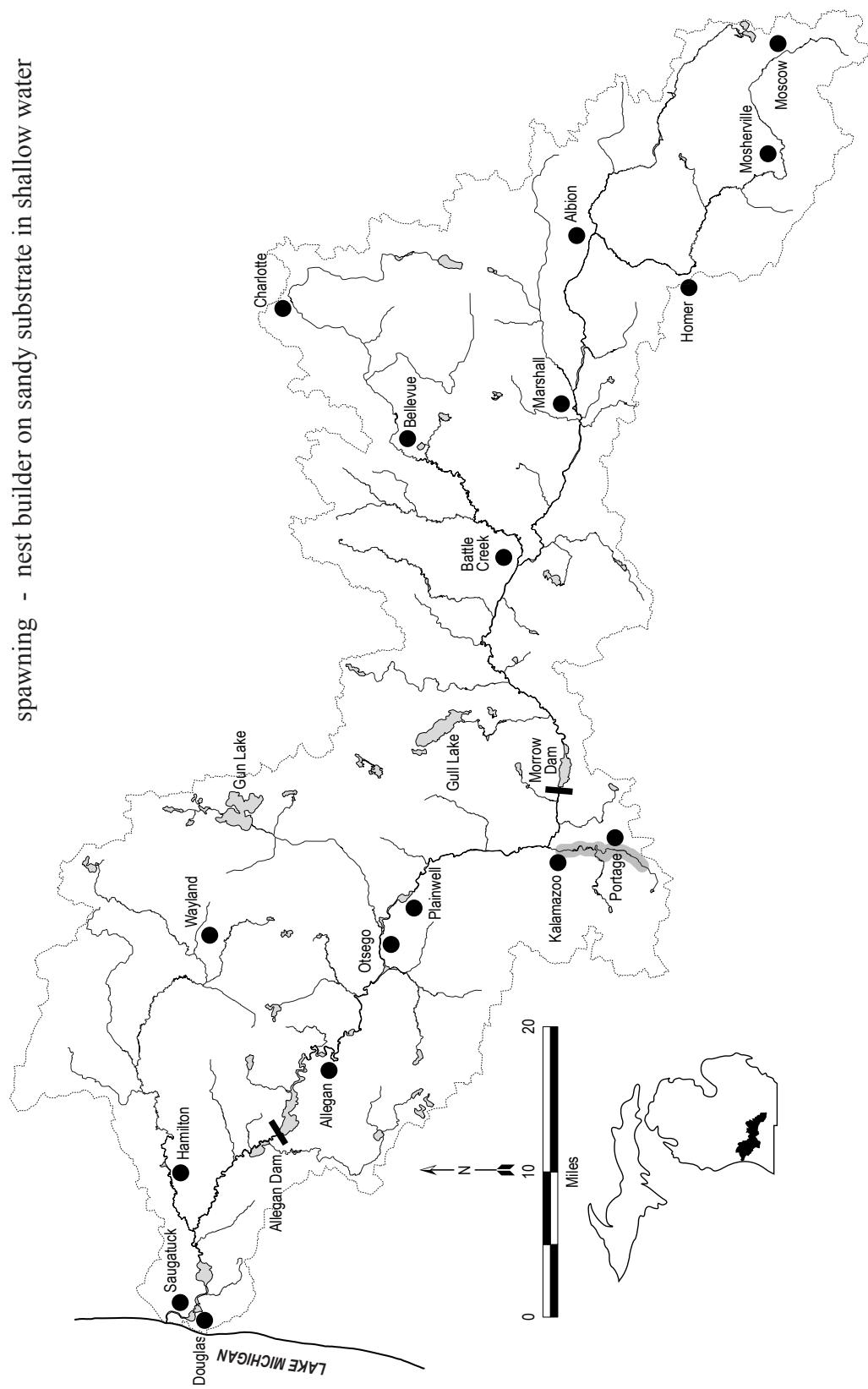
- Habitat:**
- feeding - clear, cold, densely vegetated streams, and swampy margins of lakes
 - low gradient
 - muck, peat, or marl substrate
 - not tolerant of turbidity

 - spawning - shallow cool (<66°F) water
 - aquatic reeds or grasses necessary



Threespine stickleback (*Gasterosteus aculeatus*)

Habitat:
feeding - shallow water
spawning - nest builder on sandy substrate in shallow water

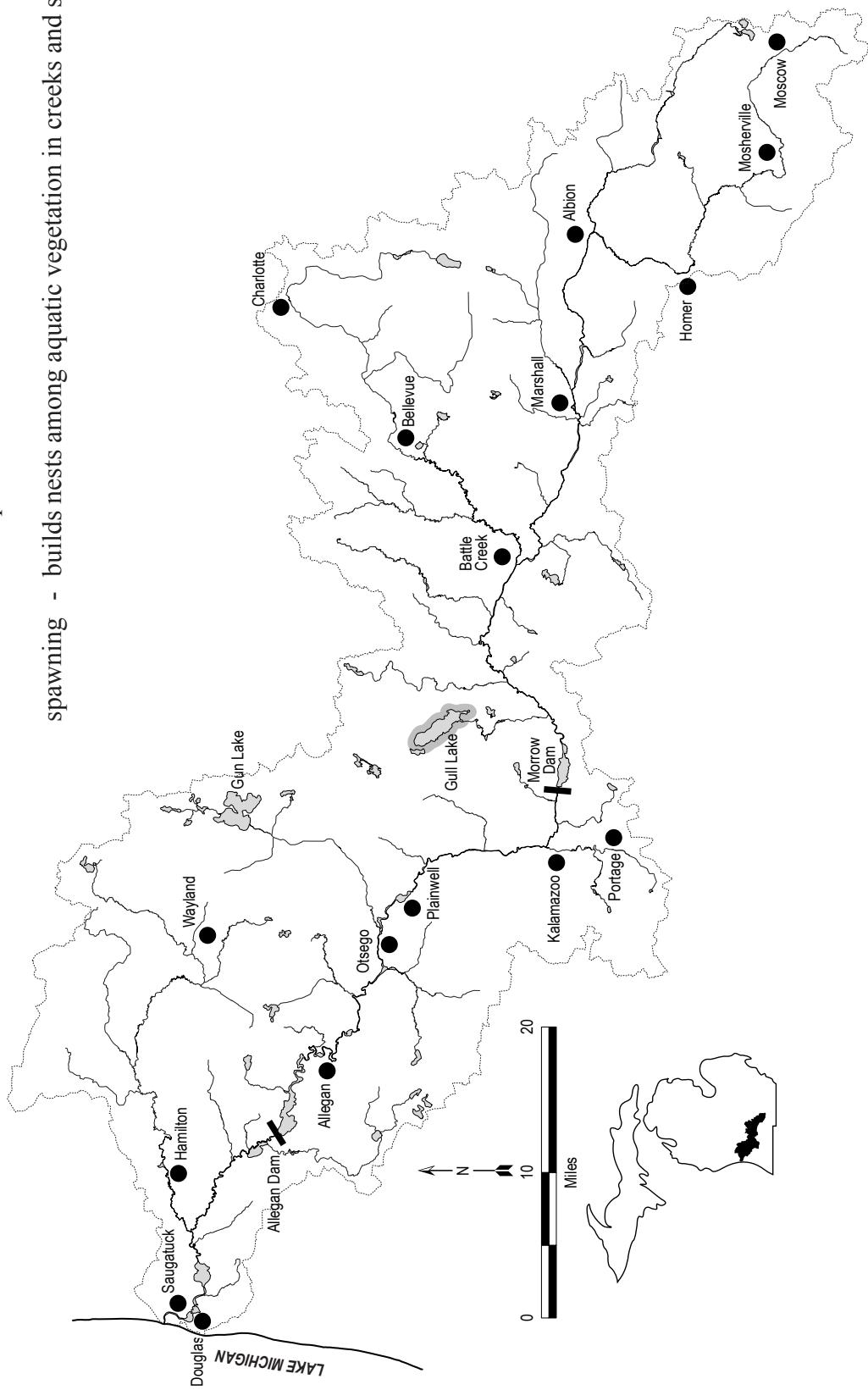


Ninespine stickleback (*Pungitius pungitius*)

Habitat:

- feeding - open water of lakes; also Lake Michigan
- cool quiet waters

spawning - builds nests among aquatic vegetation in creeks and streams

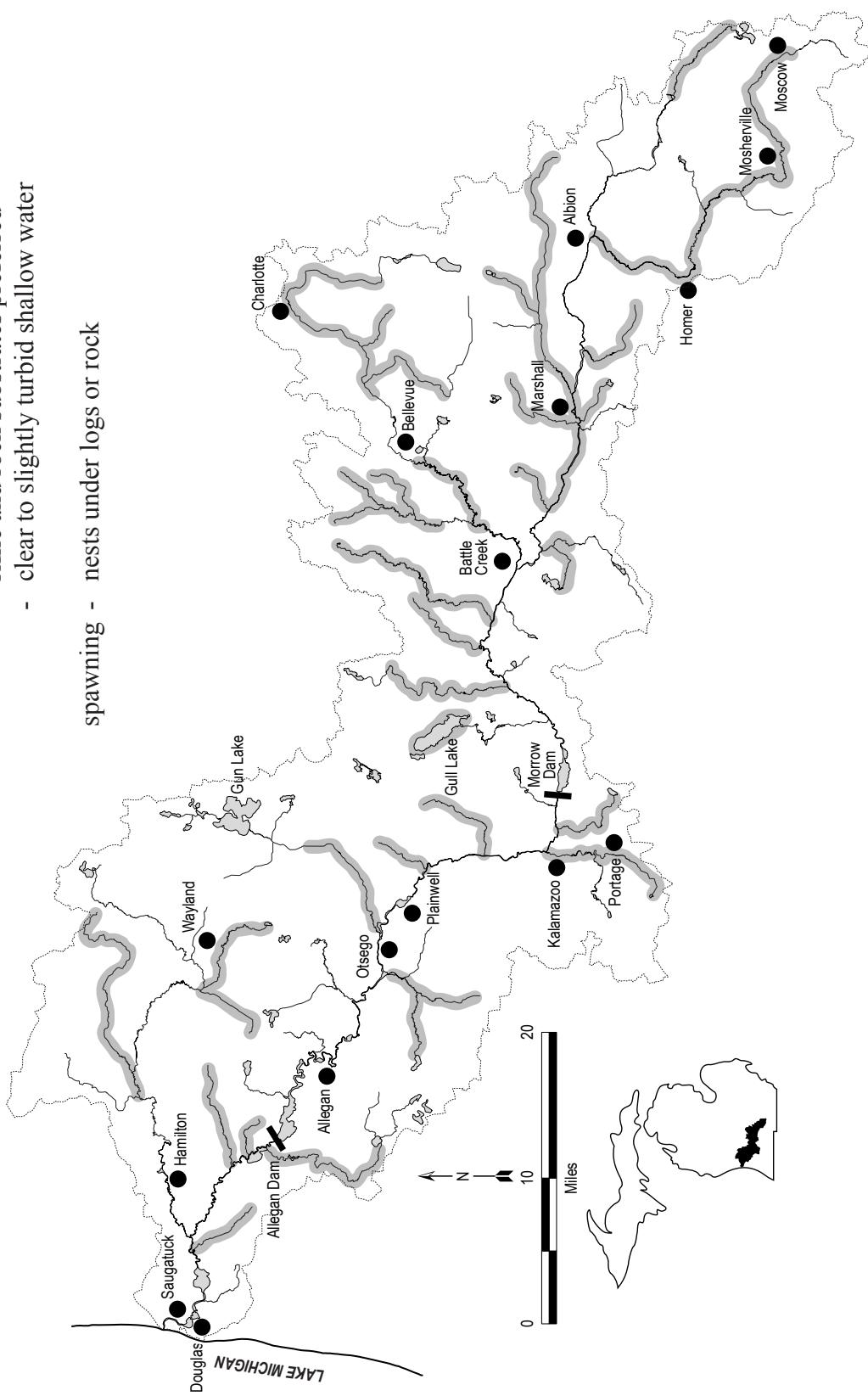


Mottled sculpin (*Cottus bairdii*)

Habitat:

- feeding - cool to cold streams
 - riffle and rock substrates preferred
 - clear to slightly turbid shallow water

spawning - nests under logs or rock



Rock bass (*Ambloplites rupestris*)

Habitat:

feeding	- clear, cool streams, rivers, and lakes
	- rocky to sand substrate
	- woody or vegetative cover

spawning	- sand or gravel nests
	- shallow water

winter refuge	- deep water
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